

**WHAT IS CLAIMED:**

1. An optical power control system comprising:
- a) an array of optoelectronic devices;
  - b) an array of optical elements;
  - 5 c) the array of optical elements positioned relative to the array of optoelectronic devices in such a manner that one or more optical elements is optically aligned to one or more optoelectronic devices;
  - d) a light-receiving device; and
  - e) a reflector proximate to the array of optical elements, the reflector optically orientated with the array of optoelectronic devices and the light-receiving device such that an emission from at least one optoelectronic device is reflected on at least a portion of the light-receiving device.
- 10 2. An apparatus as in claim 1, wherein the optical elements are optical fibers.
3. An apparatus as in claim 1, wherein the optical elements are lenses.
- 15 4. An apparatus as in claim 1, wherein the array of optical elements is a lenslet array.
5. An apparatus as in claim 1, wherein the optical elements are diffractive optical elements.
6. An apparatus as in claim 1, wherein the optical elements are filters.
7. An apparatus as in claim 1, wherein the optical elements are packaged in a ferrule.
- 20 8. An apparatus as in claim 1, wherein a gap exists between a first end of the array of optical elements and a first end of the array of optoelectronic devices.
9. An apparatus as in claim 1, wherein the light-receiving device comprises a photo-detector.
10. An apparatus as in claim 1, wherein the light-receiving device comprises a light pipe.
- 25 11. An apparatus as in claim 1, further comprising a feedback loop capable of adjusting the output of the array of optoelectronic devices in response to the emission detected by the light-receiving device.

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12. An apparatus as in claim 1, wherein the reflector scatters the emission from the optoelectronic device.
  13. An apparatus as in claim 1, wherein the reflector is adapted to a first end of the array of optical elements.
  - 5 14. An apparatus as in claim 1, wherein the reflector has an arbitrarily shaped rough surface.
  15. An apparatus as in claim 1, wherein the reflector has a scattering coating.
  16. An apparatus as in claim 1, wherein the reflector is coated with a metal.
  17. An apparatus as in claim 1, wherein the reflector comprises a conical hole.
  - 10 18. An apparatus as in claim 1, wherein the reflector comprises a spherical hole.
  19. An apparatus as in claim 1, wherein the reflector comprises a notch.
  20. An apparatus as in claim 1, wherein the reflector comprises a prism.
  21. An apparatus as in claim 1, wherein the reflector comprises an optical element.
  22. An optical power control system comprising:
    - a) an array of optoelectronic devices;
    - b) an array of optical elements;
    - c) the array of optical elements positioned relative to the array of optoelectronic devices in such a manner that one or more optical elements is optically aligned to one or more optoelectronic devices;
    - 20 d) a light-receiving device; and
    - e) an optical resin dispensed proximate to the array of optoelectronic devices and light-receiving device, wherein an emission from at least one optoelectronic device is reflected on at least a portion of the light-receiving device by the optical resin.
  - 25 23. An apparatus as in claim 22, wherein the optical elements are optical fibers.
  24. An apparatus as in claim 22, wherein the optical elements are lenses.
  25. An apparatus as in claim 22, wherein the array of optical elements is a lenslet array.

26. An apparatus as in claim 22, wherein the optical elements are diffractive optical elements.
27. An apparatus as in claim 22, wherein the optical elements are filters.
28. An apparatus as in claim 22, wherein the optical elements are packaged in a ferrule.
- 5 29. An apparatus as in claim 22, wherein a gap exists between a first end of the array of optical elements and a first end of the array of optoelectronic devices.
30. An apparatus as in claim 22, wherein the light-receiving device comprises a photodetector.
31. An apparatus as in claim 22, wherein the light-receiving device comprises a light pipe.
- 10 32. An apparatus as in claim 22, further comprising a feedback loop capable of adjusting the output of the array of optoelectronic devices in response to the emission detected by the light-receiving device.
33. The apparatus as in claim 22, wherein the optical resin is coated with a reflecting and scattering coating.
- 15 34. An optical power control system comprising:
  - a) an array of optoelectronic devices;
  - b) an array of optical elements;
  - c) the array of optical elements positioned relative to the array of optoelectronic devices in such a manner that one or more optical elements is optically aligned to one or more optoelectronic devices;
  - d) a light-receiving device; and
  - e) a reflector adapted to a first end of the array of optoelectronic devices and a first end of the light-receiving device, wherein an emission from at least one optoelectronic device is reflected on at least a portion of the light-receiving device by the reflector.
- 20 35. An apparatus as in claim 34, where the reflector is coated with a scattering coating.
36. The apparatus as in claim 34, wherein the reflector is comprised of optical resin.
- 25 37. An apparatus as in claim 34, wherein the reflector comprises an ellipsoid.

38. An apparatus as in claim 34, wherein the reflector comprises a three-dimensional conical hole.
39. An apparatus as in claim 34, wherein the reflector comprises a spherically shaped object.
- 5 40. An apparatus as in claim 34, wherein the reflector comprises a geometrically shaped object.
41. An apparatus as in claim 34, wherein the optical elements are optical fibers.
42. An apparatus as in claim 34, wherein the optical elements are lenses.
43. An apparatus as in claim 34, wherein the array of optical elements are a lenslet array.
- 10 44. An apparatus as in claim 34, wherein the optical elements are diffractive optical elements.
45. An apparatus as in claim 34, wherein the optical elements are filters.
46. An apparatus as in claim 34, wherein the optical elements are packaged in a ferrule.
47. An apparatus as in claim 34, wherein a gap exists between the first end of the array of optical elements and the first end of the array of optoelectronic devices.
- 15 48. An apparatus as in claim 34, wherein the light-receiving device comprises a photodetector.
49. An apparatus as in claim 34, wherein the light-receiving device comprises a light pipe.
50. An apparatus as in claim 34, further comprising a feedback loop capable of adjusting the output of the array of optoelectronic devices in response to the emission detected by the light-receiving device.
- 20 51. An optical power control system comprising:
- 25 a) an array of optoelectronic devices adapted to a flexible printed circuit board,
- b) a ferrule packaging an array of optical fibers, the ferrule having at least a first end;
- c) the ferrule positioned relative to the array of optoelectronic devices in such a manner that one or more optical fibers is optically aligned to one or more optoelectronic devices;

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- d) a photo-detector adapted to the flexible printed circuit board,
  - e) a reflector adapted to the first end of the ferrule, the reflector proximate to the array of optical fibers, the reflector optically orientated with the array of optoelectronic devices and the photo-detector such that an emission from at least one optoelectronic device is reflected on at least a portion of the photo-detector.
- 5           52. An apparatus as in claim 51, further comprising a feedback loop capable of adjusting the output of the array of optoelectronic devices in response to the emission detected by the photo-detector.
- 10          53. An apparatus as in claim 51, wherein the reflector scatters the emission from the optoelectronic device.
- 15          54. An apparatus as in claim 51, wherein the reflector has an arbitrarily shaped rough surface.
55. An apparatus as in claim 51, wherein the reflector has a scattering coating.
- 15          56. An apparatus as in claim 51, wherein the reflector is coated with a metal.
57. An apparatus as in claim 51, wherein the reflector comprises a conical hole.
58. An apparatus as in claim 51, wherein the reflector comprises a spherical hole.
59. An apparatus as in claim 51, wherein the reflector comprises a notch.
60. An apparatus as in claim 51, wherein the reflector comprises a prism.
- 20         61. An apparatus as in claim 51, wherein the reflector comprises an optical element.